REMARKS

Independent Claim 1 is the sole claim presented for consideration.

Claim 1 is rejected under 35 U.S.C. §103(a) as being obvious over Fan '693 in view of Yu '088. This rejection is respectfully traversed.

Claim 1 of Applicant's invention relates to a geometric model conversion method of converting a three-dimensional CAD geometric analytical model of a thin wall structure into a two-dimensional analytical model. The method includes a step of generating a plurality of tetrahedral solid elements, each of which has single-layered structure in a plate thickness direction, by dividing an input three-dimensional CAD geometric analytical model which has a thin-walled structure, and a step of connecting intermediate nodes of sides that extend in a direction of plate thickness in each tetrahedral solid element to generate a plurality of triangular shell elements or rectangular shell elements as the two-dimensional analytical model. In addition, an injection molding analysis is executed with respect to each shell element of the low-dimensional analytical model generated in the connecting step and the results of the injection molding analysis are outputted.

In accordance with Applicant's claimed invention, a high performance geometric model conversion method is provided.

The primary citation to Fan relates to a method and apparatus for structural analysis of an object having an outer surface with a plurality of surface portions. Fan discloses forming a three-dimensional model of the object, with the model comprising a surface mesh

representative of the outer surface and having a plurality of eccentric shell elements. Each of the elements is defined by a plurality of nodes on the surface.

In contrast to Applicant's claimed invention, however, Fan does not teach or suggest a geometric model conversion method that includes, among other features, a plurality of tetrahedral solid elements, each of which has a single-layered structure in a plate thickness direction, generated by dividing an input three-dimensional CAD geometric analytical model which has thin-walled structure, and a plurality of triangular shell elements or rectangular shell elements as a two-dimensional analytical model being generated by connecting intermediate nodes of sides that extend in a direction of plate thickness in each tetrahedral solid element. The Office Action asserts that Fan discloses generating a shell element model where the shell elements are generally triangular or rectangular, relying on Figures 2 and 3B. It is submitted, however, that these figures represent pentahedral elements but not tetrahedral elements as set forth in Claim 1. Fan thus also fails to teach or suggest generating a plurality of triangular shell elements or rectangular shell elements using tetrahedral solid elements.

The secondary citation to Yu relates to a modeling method for three-dimensional objects and is relied upon for using a single-layered structure in a direction of plate thickness. As understood, in Yu only the surface of a plate of a thin-walled structure is divided into surface elements. As in Fan, tetrahedral solid elements are not used in Yu.

Accordingly, the proposed combination of Yu and Fan, even if proper, still fails to teach or suggest Applicant's invention as set forth in Claim 1. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §103 is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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